In the Claims

1. (previously presented) An IR microscope comprising a sample stage, optical components for guiding analyzing radiation so that it is incident on a sample to be analyzed which is carried on said stage, and for guiding radiation from the sample to a detector,

wherein said detector comprises an array of individual detector elements, the outputs of the detector elements being directly fed in parallel to processing circuitry for image processing of the detector element outputs, each detector element having its own associated detection circuitry.

2. (cancelled)

3. (previously presented) A microscope according to claim 1, wherein the detector elements are arranged in a linear array.

4. (original) A microscope according to claim 3, wherein the detecting elements of the linear array are spaced apart.

5. (previously presented) A microscope according to claim 1, wherein the detector elements are arranged in a plurality of rows.

6. (original) A microscope according to claim 5, wherein the detector elements in each row are spaced apart and said rows are spaced apart.

7. (previously presented) A microscope according to claim 5, wherein the detector elements in each row are offset relative to those in a next adjacent row.

8. (previously presented) A microscope according to claim 1, wherein the center of each element is located at a position corresponding to a point on a regular grid.

9. (original) A microscope according to claim 8, wherein the grid pattern is square or rectangular.

10. (previously presented) A microscope according to claim 8, wherein the spacing between the centers of elements in each row corresponds to a multiple of the spacing of the points on the grid.

11. (previously presented) A microscope according to claim 1, wherein the offset in detector element position in adjacent rows corresponds to the spacing of the grid or a multiple of that spacing.

12. (previously presented) A microscope according to claim 8, wherein the dimensions of each detector element are substantially equal to the spacing of the points on the grid.

13. (previously presented) A microscope according to claim 1, including, in addition to said detector array, a single detector element, said processing means being arranged to process output signals received from either said array or said single detector element.

14. – 24. (cancelled)

25. (previously presented) A detector assembly for an infrared microscope comprising an array of individual detector elements the outputs of which are directly fed in parallel to image processing circuitry, each detector element having its own associated detection circuitry.

26. (original) A detector array according to claim 25, where the detector elements are located in a Dewar type vessel.

27. (previously presented) A detector assembly according to claim 25, wherein said array comprises a plurality of individual detector elements, each corresponding to a pixel, which are disposed in spaced relationship, the centre to centre spacing of adjacent elements being substantially equal to or a multiple of the pixel pitch.

28. (previously presented) A microscope according to claim 1 including an assembly which can be moved into or out of the beam of radiation in order to change the magnification provided by the optical elements of the microscope.

29. (previously presented) A microscope according to claim 28, wherein said magnifying assembly is located between an objective mirror of the microscope and its intermediate focus.

30. (previously presented) A microscope according to claim 28, wherein the magnifying assembly includes a reflecting element which in its operative position reflects the beam of radiation away from its normal direction of propagation and a magnifying component or components which can receive the reflected radiation.

31. (original) A microscope according to claim 30, wherein the magnifying assembly includes first and second magnifying components, the first of which receives radiation from the reflecting element and the second of which receives the radiation from the first magnifying component, and a second reflecting element for directing radiation from the second magnifying component along its normal direction of propagation.

32. (original) A microscope according to claim 31, wherein the first and second magnifying components comprise spherical mirrors.

33. (previously presented) A microscope according to claim 31, wherein the first and second reflecting elements are plane mirrors.

34. (previously presented) A microscope according to claim 28, wherein the magnifying assembly is movable between an operative and an inoperative condition by rotation about an axis.

35. (previously presented) A microscope according to claim 30, wherein the assembly is movable between an operative position in which the reflecting element is located in the beam of radiation and an inoperative position in which the radiation can propagate to the detector elements without magnification by the magnifying assembly by rotation about an axis through the first and second components.

36. (previously presented) A microscope according to claim 34, wherein the angle of rotation though which the assembly can be rotated is of the order of 90°.

37. (previously presented) A microscope according to claim 28 including a shield for shielding the detector from unwanted radiation, said shield being switchable between an operative and an inoperative position.

38. (previously presented) A microscope according to claim 37, wherein the shield comprises an element disposed along the propagation path of radiation reflected from the first magnifying component to the second magnifying component, said element having therein an aperture and acting as a cold shield to prevent at least some of the radiation from arriving at the detector.

39. (previously presented) A microscope according to claim 38, wherein said element comprises a plane mirror which allows through the aperture a beam of rays to be detected but substantially blocks rays outside that beam.

40. (previously presented) An IR microscope comprising:

a sample stage,

optical components for guiding analyzing radiation so that it is incident on a sample to be analyzed which is carried on said sample stage, and for guiding radiation from the sample to a detector, and

said detector having a plurality of individual detector elements, each corresponding to a pixel, which are disposed in spaced relationship, the centre to centre spacing of adjacent elements being substantially equal to or a multiple of the pixel pitch, the outputs of the detector elements being directly fed in parallel to image processing circuitry for processing the detector element outputs, each detector element having its own associated detection circuitry.

41. (previously presented) The IR microscope according to claim 1 wherein said detector comprises a photoconductive element.

42. (previously presented) A microscope according to claim 26 including a shield for shielding at least one of the detector elements from unwanted radiation, said shield being switchable between an operative and an inoperative position.

43. (previously presented) The microscope according to claim 42 wherein said shield is located external to the Dewar type vessel.

44. (previously presented) An IR microscope comprising a sample stage, optical components for guiding analyzing radiation so that it is incident on a sample to be

analyzed which is carried on said stage, and for guiding radiation from the sample to a detector,

said detector comprising an array of individual detector elements, the outputs of the detector elements being directly fed in parallel to image processing circuitry for processing of the detector element outputs;

an assembly movable between an operative and an inoperative position by rotation about an axis in order to change the magnification provided by the optical elements of the microscope.